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EXAMINER

CURS, NATHAN M

ART UNIT	PAPER NUMBER
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2613

NOTIFICATION DATE	DELIVERY MODE
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ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/041,853	Applicant(s) WAY, DAVID G.	
	Examiner NATHAN M. CURS	Art Unit 2613	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 October 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7,9,11 and 13-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7,9,11 and 13-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 January 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-7, 9, 11, and 13-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Colbourne et al. ("Colbourne") (US Patent No. 6654564) in view of Delavaux et al. ("Delavaux") (US Patent No. 5608562), and further in view of Keys (US Patent No. 6456773), and further in view of Feinberg (US Patent Application Publication No. 2003/0031433).

Regarding claim 1, Colbourne discloses a dispersion compensation system comprising: a dispersion compensation module (DCM) operable to receive optical input and provide optical output having a negative dispersion relative to the optical input (fig. 13b, element R3 and fig. 19, element 192) and a dispersion enhancement module (DEM) adapted to be optically coupled between the DCM and an optical fiber having a positive dispersion (fig. 13b, element R1 and fig. 19, element 191), the DEM operable to selectively increase the positive dispersion provided by the optical fiber by a selected one of a plurality of amounts and to provide the optical input to the DCM, the optical input having a positive dispersion substantially equal to the positive dispersion of the

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optical fiber plus the selected one of the amounts of dispersion in the DEM (col. 1, lines 7-9 and lines 18-27, and col. 4, lines 31-61 and col. 9, line 64 to col. 10, line 61).

Colbourne discloses controlling the tunable dispersion compensation amount (Colbourne: col. 9, line 64 to col. 10, line 61 and col. 11, lines 3-22) but does not disclose the dispersion enhancement module comprising a plurality of dispersion enhancement fibers. Delavaux discloses a variable dispersion compensation device using switched DCFs and fixed DCFs over various compensation values, the switched DCFs controlled by a controller that is operable to determine the dispersion of the variable compensator, the dispersion parameter of the fiber, and the selected amount of dispersion to provide (figs. 5 and 9 and col. 3, line 43 to col. 4, line 10 and col. 4, lines 32-63). It would have been obvious to one of ordinary skill in the art at the time of the invention to use the variable dispersion compensation devices and controllers of Delavaux for the variable compensators of Colbourne since dispersion compensation fiber is conventional and since the etalons of Colbourne require dimensions and free spectral range that are dependent on channel spacing of a multi-wavelength signal. Keys discloses tailoring dispersion compensating modules for specific compensation values by using various segments of DCF, including positive and negative dispersion segments (col. 1, line 57 to col. 2, line 11). It would have been obvious to one of ordinary skill in the art at the time of the invention to use a set of positive dispersion segments and a set of negative dispersion segments in each of the DCF-based dispersion compensation devices of the combination of Colbourne and Delavaux, in order to be able to use the same dispersion compensation device for spans of varying

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length and fiber types, by connecting the appropriate segments of DCF within the device (negative, positive, or both), as taught by Keys. The combination of Colbourne, Delavaux and Keys discloses the controller determining the dispersion of the compensator and the fiber, and determining the dispersion compensation adjustment amount, but does not disclose the controller detecting a switch from the transport fiber to a backup optical transport fiber, the backup transport fiber having a third positive dispersion to reconfigure the dispersion enhancement module to provide a fourth positive dispersion, the sum of the third positive dispersion and the fourth positive dispersion substantially equal to the magnitude of the negative dispersion. Feinberg disclose a protected optical transmission system where different dispersion compensation values are used for each of the received working and protection signals (fig. 4, elements 420, 425 and 322 and paragraphs 0037 and 0041). It would have been obvious to one of ordinary skill in the art at the time of the invention to supply a protection switched optical input to the dispersion compensation system of the combination of Colbourne, Delavaux and Keys, with the controller of the combination of Colbourne, Delavaux and Keys detecting a fiber switch by way of detecting a change in the needed amount of dispersion compensation when the incoming fiber signal is switched due to a protection switch, in order to provided the advantage of adding a protected input to the combination of Colbourne, Delavaux and Keys without having to duplicate the dispersion compensation system since it would automatically adjust the dispersion compensation for either of the working or protect input signal.

Regarding claim 2, the combination of Colbourne, Delavaux, Keys and Feinberg discloses the dispersion compensation system of claim 1, wherein a magnitude of the positive dispersion of the optical input is substantially equal to a magnitude of the negative dispersion of the DCM, such that the optical output has a dispersion near to zero (Colbourne: col. 4, lines 31-61 and Keys: col. 1, line 57 to col. 2, line 11, as applicable in the combination).

Regarding claim 3, the combination of Colbourne, Delavaux, Keys and Feinberg discloses the dispersion compensation system of claim 1, wherein the DCM is designed to compensate for dispersion along a fixed length of an optical fiber type, the optical fiber type having a positive dispersion per unit length and wherein, if the optical fiber coupled to the DEM has an actual length less than the fixed length, the selected amount of dispersion in the DEM increases dispersion by an amount substantially equal to dispersion resulting from a length of the optical fiber type equal to the difference of the fixed length and the actual length (Colbourne: col. 1, lines 7-9 and lines 18-27 and col. 4, lines 31-61 and Keys: col. 1, line 57 to col. 2, line 11, as applicable in the combination).

Regarding claim 4, the combination of Colbourne, Delavaux, Keys and Feinberg discloses the dispersion compensation system of claim 1, and discloses two amplifiers, where the DCM is between the two amplifiers (Delavaux: fig. 1 and col. 2, lines 53-64, as applicable in the combination), but does not disclose the set of positive DCFs before the amplifier in front of the DCM. However, based on the pre-amp teaching of Delavaux, it would have been obvious to one of ordinary skill in the art at the time of the

invention to use a pre-amplifier before both a set of positive DCFs and a set of negative DCFs for the combination since each DCF fiber set has a length of fiber that contributes loss to the signal. Further, it would have been obvious to one of ordinary skill in the art at the time of the invention that the serial order of devices within the dispersion compensation device would be DEM then DCM as suggested by Colbourne.

Regarding claim 5, the combination of Colbourne, Delavaux, Keys and Feinberg discloses the dispersion compensation system of claim 1, and disclose that the DCM comprises dispersion compensation fiber having a defined negative dispersion per unit length (Colbourne: col. 9, lines 12-14 and Keys: col. 1, lines 32-67, where a DCF fiber segment with negative dispersion inherently has a definite negative dispersion per unit length, as applicable in the combination).

Regarding claim 6, the combination of Colbourne, Delavaux, Keys and Feinberg discloses the dispersion compensation system of claim 1, and discloses that the DEM comprises a plurality of dispersion enhancement fibers each having a defined positive dispersion per unit length, each of the dispersion enhancement fibers having a different length (Delavaux.: col. 3, lines 43-56 and Keys: col. 1, lines 57-67, where a DCF fiber segment with positive dispersion inherently has a definite positive dispersion per unit length, as applicable in the combination).

Regarding claim 7, the combination of Colbourne, Delavaux, Keys and Feinberg discloses the dispersion compensation system of claim 1, wherein the DEM is operable to selectively couple one or more of the dispersion enhancement fibers together to form an optical path coupling the optical fiber to the DCM through the selected one or more

of the dispersion enhancement fibers (Delavaux: col. 3, lines 43-56 and Keys: col. 1, lines 57-67, as applicable in the combination).

Regarding claim 9, Colbourne discloses a method for dispersion compensation comprising: providing an optical transport fiber coupling a first network element and a second network element, the transport fiber having a first positive dispersion (col. 1, lines 7-9 and lines 18-27); providing a dispersion enhancement module disposed between the transport fiber and the second network element (fig. 13b, element R1 and fig. 19, element 191); determining a negative dispersion of the second network element (col. 11, lines 3-22); and configuring the dispersion enhancement module to provide second positive dispersion, the sum of the first positive dispersion and the second positive dispersion substantially equal to the magnitude of the negative dispersion (col. 4, lines 31-61 and col. 9, line 64 to col. 10, line 61). Colbourne does not disclose that routing signals from the transport fiber through the dispersion enhancement module comprises routing signals through one or more dispersion enhancement fibers.

Delavaux discloses a variable dispersion compensation device using switched DCFs and fixed DCFs over various compensation values, the switched DCFs controlled by a controller (figs. 5 and 9 and col. 3, line 43 to col. 4, line 10 and col. 4, lines 32-63).

Keys discloses tailoring dispersion compensating modules for specific compensation values by using various segments of DCF, including positive and negative dispersion segments (col. 1, line 57 to col. 2, line 11). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine Delavaux and Keys with Colbourne as described above for claim 1. The combination of Colbourne, Delavaux

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and Keys discloses the controller determining the correct dispersion compensation adjustment (Colbourne: col. 11, lines 3-22 and Delavaux: col. 3, lines 10-42, as applicable in the combination), but do not disclose detecting a switch from the transport fiber to a backup optical transport fiber, the backup transport fiber having a third positive dispersion; and reconfiguring the dispersion enhancement module to provide a fourth positive dispersion, the sum of the third positive dispersion and the fourth positive dispersion substantially equal to the magnitude of the negative dispersion. Feinberg disclose a protected optical transmission system where different dispersion compensation values are used for each of the received working and protection signals (fig. 4, elements 420, 425 and 322 and paragraphs 0037 and 0041). It would have been obvious to one of ordinary skill in the art at the time of the invention to supply a protection switched optical input to the dispersion compensation system of the combination of Colbourne, Delavaux and Keys, with the controller of the combination detecting a fiber switch by way of detecting a change in the needed amount of dispersion compensation when the incoming fiber signal is switched due to a protection switch, in order to provided the advantage of adding a protected input to the combination without having to duplicate the dispersion compensation system since it would automatically adjust the dispersion compensation for either of the working or protect input signal.

Regarding claim 11, the combination of Colbourne, Delavaux, Keys and Feinberg discloses the method claim 9, and that the negative dispersion in the second network element results from dispersion compensation fiber having a defined negative

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dispersion per unit length (Colbourne: col. 9, lines 12-14 and Keys: col. 1, lines 32-67, where a DCF fiber segment with negative dispersion inherently has a definite negative dispersion per unit length, as applicable in the combination).

Regarding claim 13, Colbourne discloses a dispersion compensation system comprising: a dispersion compensation device operable to provide optical output having a negative dispersion (fig. 13b, element R3 and fig. 19, element 192) and a dispersion enhancement module (DEM) (fig. 13b, element R1 and fig. 19, element 191) adapted to be optically coupled to an optical fiber having a positive dispersion and to receive an optical input from the optical fiber, the DEM operable to selectively increase the positive dispersion provided by the optical fiber by a selected one of a plurality of amounts, the optical input having a positive dispersion substantially equal to the positive dispersion of the optical fiber plus the selected one of the amounts of dispersion in the DEM (col. 1, lines 7-9 and lines 18-27, and col. 4, lines 31-61 and col. 9, line 64 to col. 10, line 61). Colbourne discloses controlling the tunable dispersion compensation amount (Colbourne: col. 9, line 64 to col. 10, line 61 and col. 11, lines 3-22) but does not disclose a first optical amplifier and a second optical amplifier and negative dispersion compensation fiber optically coupled between the first optical amplifier and the second optical amplifier, and do not disclose the dispersion enhancement module comprising a plurality of dispersion enhancement fibers. Delavaux disclosed using pre and post amplifiers with a DCF-based variable dispersion compensation device controlled by a controller that is operable to determine the dispersion of the DCFs of the variable compensator, the dispersion parameter of the optical fiber, and the selected amount of

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dispersion to provide (fig. 1 and col. 2, lines 53-64 and figs. 5 and 9 and col. 3, line 43 to col. 4, line 10 and col. 4, lines 32-63). It would have been obvious to one of ordinary skill in the art at the time of the invention to use the variable dispersion compensation devices and controllers of Delavaux for the variable compensators of Colbourne since dispersion compensation fiber is conventional and since the etalons of Colbourne require dimensions and free spectral range that are dependent on channel spacing of a multi-wavelength signal, and it would have been obvious to one of ordinary skill in the art at the time of the invention to use a pre-amplifier and post-amplifier when using DCF since each DCF fiber set has a length of fiber that contributes loss to the signal. Keys discloses tailoring dispersion compensating modules for specific compensation values by using various segments of DCF, including positive and negative dispersion segments (col. 1, line 57 to col. 2, line 11). It would have been obvious to one of ordinary skill in the art at the time of the invention to use a set of positive dispersion segments and a set of negative dispersion segments in each of the DCF-based dispersion compensation devices of the combination of Colbourne and Delavaux in order to be able to use the same dispersion compensation device for spans of varying length and fiber types, by connecting the appropriate segments of DCF within the device (negative, positive, or both), as taught by Keys. Further, based on the pre-amp teaching of Delavaux, it would have been obvious to one of ordinary skill in the art at the time of the invention to use a pre-amplifier before each set of DCFs for the combination of Colbourne, Delavaux and Keys since each DCF fiber set has a length of fiber that contributes loss to the signal. Further, it would have been obvious to one of ordinary skill in the art at the time of the

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invention that the serial order of devices within the dispersion compensation device would be DEM then DCM, since this is suggested by Colbourne. The combination of Colbourne, Delavaux and Keys discloses the controller determining the dispersion of the compensator, the fiber and the dispersion compensation adjustment amount, but does not disclose the controller detecting a switch from the transport fiber to a backup optical transport fiber, the backup transport fiber having a third positive dispersion to reconfigure the dispersion enhancement module to provide a fourth positive dispersion, the sum of the third positive dispersion and the fourth positive dispersion substantially equal to the magnitude of the negative dispersion. Feinberg disclose a protected optical transmission system where different dispersion compensation values are used for each of the received working and protection signals (fig. 4, elements 420, 425 and 322 and paragraphs 0037 and 0041). It would have been obvious to one of ordinary skill in the art at the time of the invention to supply a protection switched optical input to the dispersion compensation system of the combination of Colbourne, Delavaux and Keys, with the controller of the combination detecting a fiber switch by way of detecting a change in the needed amount of dispersion compensation when the incoming fiber signal is switched due to a protection switch, in order to provided the advantage of adding a protected input to the combination without having to duplicate the dispersion compensation system since it would automatically adjust the dispersion compensation for either of the working or protect input signal.

Regarding claim 14, the combination of Colbourne, Delavaux, Keys and Feinberg discloses the dispersion compensation system of claim 13, wherein the DEM comprises

a plurality of dispersion enhancement fibers each having a defined positive dispersion per unit length, each of the dispersion enhancement fibers having a different length (Delavaux: col. 3, lines 43-56 and Keys: col. 1, lines 57-67, where a DCF fiber segment with positive dispersion inherently has a definite positive dispersion per unit length, as applicable in the combination).

Regarding claim 15, the combination of Colbourne, Delavaux, Keys and Feinberg discloses the dispersion compensation system of claim 14, wherein the DEM is operable to selectively couple one or more of the dispersion enhancement fibers together to form an optical path coupling the optical fiber to the DCM through the selected one or more of the dispersion enhancement fibers (Delavaux: col. 3, lines 43-56 and Keys: col. 1, lines 57-67, as applicable in the combination).

Regarding claim 16, Colbourne discloses a dispersion enhancement module (fig. 13b, element R1 and fig. 19, element 191) adapted to be optically coupled to a dispersion compensation module having a fixed negative dispersion (fig. 13b, element R3 and fig. 19, element 192 and col. 4, lines 53-61), the dispersion enhancement module comprising: an optical input adapted to couple to an optical transport fiber and an optical output adapted to couple to the dispersion compensation module, wherein optical signals from the optical output have a positive dispersion substantially equal to a sum of positive dispersion of the transport fiber and positive dispersion of the optical path (col. 1, lines 7-9 and lines 18-27, and col. 4, lines 31-61 and col. 9, line 64 to col. 10, line 61). Colbourne discloses controlling the tunable dispersion compensation amount (Colbourne: col. 9, line 64 to col. 10, line 61 and col. 11, lines 3-22) but does

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not disclose the dispersion enhancement module comprising a plurality of switched dispersion enhancement fibers forming a path. Delavaux discloses a variable dispersion compensation device using switched DCFs and fixed DCFs over various compensation values, forming a path, the switched DCFs controlled by a controller that is operable to determine the dispersion of the variable compensation device and the path through the switches of DCFs selected for the compensation, the dispersion parameter of the fiber, and the selected amount of dispersion to provide (figs. 5 and 9 and col. 3, line 43 to col. 4, line 10 and col. 4, lines 32-63). Keys discloses tailoring dispersion compensating modules for specific compensation values by using various segments of DCF, including positive and negative dispersion segments (col. 1, line 57 to col. 2, line 11). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine Delavaux and Keys with Colbourne as described above for claim 1. The combination of Colbourne, Delavaux and Keys discloses the controller determining the dispersion of the compensation device and the fiber, and determining the dispersion compensation adjustment amount, but does not disclose the controller detecting a switch from the transport fiber to a backup optical transport fiber, the backup transport fiber having a third positive dispersion to reconfigure the dispersion enhancement module to provide fourth positive dispersion, the sum of the third positive dispersion and the fourth positive dispersion substantially equal to the magnitude of the negative dispersion. Feinberg disclose a protected optical transmission system where different dispersion compensation values are used for each of the received working and protection signals (fig. 4, elements 420, 425 and 322 and paragraphs 0037 and 0041).

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It would have been obvious to one of ordinary skill in the art at the time of the invention to supply a protection switched optical input to the dispersion compensation system of the combination of Colbourne, Delavaux and Keys, with the controller of the combination detecting a fiber switch by way of detecting a change in the needed amount of dispersion compensation when the incoming fiber signal is switched due to a protection switch, in order to provided the advantage of adding a protected input to the combination without having to duplicate the dispersion compensation system since it would automatically adjust the dispersion compensation for either of the working or protect input signal.

Regarding claim 17, the combination of Colbourne, Delavaux, Keys and Feinberg discloses the dispersion enhancement module of claim 16, wherein a magnitude of the positive dispersion of the optical signals is substantially equal to a magnitude of the negative dispersion of the dispersion compensation module (Colbourne: col. 4, lines 31-61 and Keys: col. 1, line 57 to col. 2, line 11, as applicable in the combination).

Regarding claim 18, the combination of Colbourne, Delavaux, Keys and Feinberg discloses the dispersion enhancement module of claim 16, and discloses a controller operable to: detect a switch from the optical transport fiber to a backup optical transport fiber; determine a difference in magnitudes of the negative dispersion of the dispersion compensation module and a positive dispersion of the backup optical transport fiber; and reconfigure the optical switches such that the optical path has a positive dispersion equal to the difference in the magnitudes (Colbourne: col. 9, line 64 to col. 10, line 61 and col. 11, lines 3-22, and Delavaux: figs. 5 and 9 and col. 3, line 43 to col. 4, line 10

and col. 4, lines 32-63, and Feinberg: fig. 4, elements 420, 425 and 322 and paragraphs 0037 and 0041, as applicable in the combination).

Regarding claim 19, the combination of Colbourne, Delavaux, Keys and Feinberg disclose the dispersion enhancement module of claim 16, further comprising a controller operable to: determine the negative dispersion of the dispersion compensation module, determine the positive dispersion of the optical transport fiber, and configure the switches such that a magnitude of the positive dispersion of the optical signals from the optical output is substantially equal to a magnitude of the negative dispersion of the dispersion compensation module (Colbourne: col. 9, line 64 to col. 10, lines 61 and col. 11, lines 3-22 and Delavaux: col. 3, lines 10-42, as applicable in the combination).

Regarding claim 20, the combination of Colbourne, Delavaux, Keys and Feinberg disclose the dispersion enhancement module of claim 16, wherein the switches are further operable to optically couple the optical input and the optical output such that the optical path bypasses the dispersion enhancement fibers (as described above for claim 16 for the dispersion compensation device of the combination, where the positive dispersion fibers will be bypassed in any case where positive dispersion is not needed to create the dispersion compensation value required for compensation of a signal received from a span).

Response to Arguments

3. Applicant's arguments filed 21 October 2008 have been fully considered but they are not persuasive.

In the Remarks page 9 lines 14-24, regarding claims 1, 9, 13, 16 and their dependent claims, Applicant initially asserts that the Office action points to Feinberg to teach *"a controller operable ... to detect a switch from the optical fiber to a backup optical transport fiber, the backup transport fiber having a third positive dispersion, and to reconfigure the dispersion enhancement module to provide a fourth positive dispersion, the sum of the third positive dispersion and the fourth positive dispersion substantially equal to the magnitude of the negative dispersion."* However, this assertion is not consistent with Feinberg's role in the rejections. The combination before Feinberg already has a controller and already detects dispersion values and configures dispersion enhancement, etc. The role of Feinberg for the combination is based on Feinberg teaching of a protected optical transmission system where different dispersion compensation values are used for each of the received working and protection signals. Based on this teaching, it would have been obvious to provide a protection switched optical input to the existing dispersion compensation system of the combination, as described in the rejections. When such protection-switched input (have different dispersion values for working and protection) is provided, the existing system of the combination detects the fiber switch by way of detecting a change in dispersion values (since it is already detecting any needed amount of dispersion compensation in general), and then changes the compensation to reflect the new needed amount.

Applicant further argues the combination including Feinberg addresses the elements of "a controller operable... to detect a switch", but not the full clause. However, as described above, Feinberg's role in the rejections is not to add a controller,

etc., but rather to add a protection switched input to the existing combination, thereafter the existing combination will react to the changes in dispersion values resulting from the protection switch. "Third positive dispersion" and "fourth positive dispersion" occur when a protection switch presents a new dispersion scenario to the compensation system, the new scenario replacing the previous "first positive dispersion" and "second positive dispersion" values (from the viewpoint of the dispersion compensation system), which become irrelevant/inactive after the protection switch.

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to NATHAN M. CURS whose telephone number is (571)272-3028. The examiner can normally be reached on 9:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (571) 272-3022. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/NATHAN M CURS/

Examiner, Art Unit 2613